
Patellar Tendinopathy (DRAFT)

Introduction

The purpose of this leaflet is to provide you with some general advice about Patellar Tendinopathy, how to manage your pain and some simple exercises. You may be sent this leaflet while waiting for your physiotherapy appointment.



What is Patellar Tendinopathy?

Patellar tendinopathy (tendinosis) is a common condition that affects the tendon that connects all of the thigh muscles at the front of your leg to the shinbone (Tibia). It is often referred to as 'Jumpers Knee'. The Patellar tendon is a strong tendon, allowing you to run, squat and jump. It therefore takes a lot of stress doing general functional activities. Sometimes due to overuse or abnormal stress to the tendon (i.e. a sudden increase of activity such as running, jumping or hill walking) the tendon is unable to adapt to the degree of strain placed upon it. Microscopic

changes within the tendon fibres can cause thickening and the tendon can become painful and swelling / stiffness can occur. Certain activities (such as running, jumping) will need to be modified to allow the tendon to settle down and heal. For most people the symptoms of Patellar tendinopathy usually clear within 3-6 months of starting treatment.

Common symptoms of Patellar Tendinopathy are:

Pain is usually felt in the tendon just below the knee cap when touched or squeezed. It may feel thicker than the other side.

Pain may vary in intensity and get easier with exercise or activity as the tendon adjusts to the load. However, following activity the tendon may become painful and stiff. Sometimes the patellar pain can be severe enough to stop individuals doing certain activities and sports.

It tends to feel very stiff in the morning which improves after a few minutes walking. The tendon itself can sometimes become swollen and tender to touch. The level of pain itself can vary from soreness after exercising to severe pain that limits exercise entirely.

How is this condition diagnosed?

Patellar tendinopathy is usually diagnosed by a doctor or physiotherapist on physical examination. Scans/x-rays are not usually needed unless there is a suggestion of a complete rupture of the tendon. In this case, an ultrasound scan can be used. The U/S scan creates an image on the screen by using sound waves. It is a quick, effective and simple way to examine your tendon. On rare occasions Magnetic Resonance Imaging (MRI) may be used.

What can cause Patellar Tendinopathy?

The cause of patellar tendinopathy is not yet completely understood but we know that tendinopathy occurs when a tendon is unable to adapt to the strain placed upon it. As such there are certain general factors that are thought to increase your risk:-

- Age: The condition is more commonly found after the age of 30.
- Gender: It is more common in men.
- Weight: Being overweight leaves you more at risk of a patellar tendinopathy. See your GP to discuss strategies to help you loose weight.
- Poor strength in your stomach muscles around your waist and pelvis and lower limb. This results in force generation down the lower limb that can exert excessive forces on your patellar tendon.

Exercise and training related risk factors:

- Footwear with poor cushioning (e.g. aging trainers or poor quality trainers) of impact forces generated up the lower limb can result in increased force generation through the patellar tendon of the knee.
- Exercise where you have poor balance and control of your lower limb movement can also increase your risk of developing patellar tendinopathy.
- Excessive plyometric exercises (e.g. jumping, hopping, sudden stop/start and stepping up/down drills).
- Running further than you are used to doing too quickly.
- Running at a higher intensity than you are used to too quickly.
- Too frequently overloading the tendon and lack of variation of your training programme (e.g. weight training – squats, lunges, squat jumps)

How can I treat my Patellar Tendinopathy?

Thankfully, patellar tendinopathy can usually be treated through activity modification and exercise.

Ice therapy - Ice can help in reducing pain and possible swelling around the tendon – wrapping an icepack in a towel and placing it against the patellar tendon (for no more than 15-20 minutes) at regular intervals throughout the day (i.e. four times a day if possible) and after exercise can help with pain.

Pain relief - Pain relief can be helpful however you should discuss this with either your pharmacist or GP.

Relative rest - Relative rest means trying to keep active and maintain your fitness doing other forms of exercise that allows your patellar tendon to take less load while it is recovering. Although keeping active is important, certain activities such as running and jumping are likely to aggravate symptoms. It is therefore advised that you reduce these activities to a level that doesn't cause symptoms, or change your activity (e.g. to swimming, cycling, aqua jogging (running in water)).

- You may be advised to stop your particular sporting activity for approximately 1-2 months.

Sporting activity/training modification

Keeping active is an important aspect of your rehabilitation. Cross training is a good way of keeping fit, exercising other parts of your body whilst recovering from injury. Using exercise and gym equipment to strengthen your core stomach muscles (e.g. pilates), pelvis (e.g. gym machines or aqua aerobics in the pool, general swimming), upper body and upper limbs routines in the gym or at home will all help you maintain your fitness levels.

Physiotherapy and exercise

A physiotherapist can provide you with exercises to improve strength and flexibility in your pelvis and thigh/lower limbs.

Evidence shows that exercises that improve strength when the muscle lengthens / and when the muscle shortens can gradually improve the tendons ability to cope with load. The exercises are done in a controlled way and should help to gradually reduce pain and possible swelling in the patellar tendon.

This programme can take up to approximately three to six months to significantly improve your symptoms, however, this is only a guide as symptoms can improve a lot quicker than that. Unfortunately there are no 'quick fixes' for this condition.

Morning stiffness is usually the first symptom to improve however pain and discomfort on touching/squeezing the tendon can take longer to settle.

Guidelines for the Rehabilitation Programme

There are some important points you need to be aware of whilst performing this programme

- When starting the exercises you may initially experience an increase in pain.
- Use a pain scale from 0 to 10 ('0' equals no pain to '10' being the worst pain imaginable).
- As long as this pain is at a low level ('3-4' out of '10' on your pain scale) and as long as the pain settles within 20-30mins, this is acceptable. Your pain will reduce as you continue with your rehabilitation.
- If your pain becomes lower than this you can progress to the next phase of the rehabilitation.
- If your pain is higher than '4' out of '10' you need to reduce the repetitions and/or the load or use the guidelines mentioned above in 'How can I treat my Patellar Tendinopathy'. When your pain reduces to below '4 out of 10' then resume with your set exercise programme where you left off.
- If you have had this problem for a long time it may take 6 – 12 weeks to see significant improvement, so don't give up if you are not seeing benefit in the first few weeks.
- If morning stiffness in the knee starts to last longer due to doing these exercises then reduce your repetitions until this settles down. If reducing repetitions does not help then rest for 2-6 days.

Rehabilitation Programme Stage 1

The exercises in each stage of the programme should be done daily.

In the initial stages use a wall for support for the standing exercises.

[Video](#)



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Mini-squat

Stand tall with your feet approximately hip-width apart and weight distributed evenly on both feet.

Bend your knees and hips as if you were sitting down. Knees and toes should be pointing in the same direction.

Hold for 10 seconds, (or as able)

Push back to the starting position using your front thighs and buttock muscles.

Repeat up to 10 times, Daily 3 times.

[Video](#)



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Squat

Stand tall with feet slightly wider than hip-width apart. Toes pointing forward or turned a few degrees outwards. Keep your chest up and your spine and neck in a neutral position.

Squat down by sitting back and bring your arms forward. Hold for 10 seconds (or as able).

Push back up through the heels, chest up, and straighten your hips.

Note:

- Keep your hips, knees and toes aligned and don't let your lower back round.
- Keep your weight evenly on your whole foot.

Repeat up to 10 times, Daily 3 times.

Rehabilitation Programme Stage 2

[Video](#)



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Stand holding a stick.

Take a step forward and bend your knees, keep the front knee in line with the stick. Do not allow your knees to turn in or out.

Hold for 10 seconds, (or as able)

Return to the starting position.

Repeat up to 10 times, Daily 3 times.

Rehabilitation Programme Stage 3

[Video](#)



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Incline Single-leg Squat

Stand tall on an inclined step or other sloping surface.

Lift the unaffected leg and squat down with the affected leg, then put the unaffected leg down and use it to rise back to the starting position while using the affected leg as little as possible.

Hold for 10 seconds (or as able)

Repeat up to 10 times, Daily 3 times.

Rehabilitation Programme Stage 4

[Video](#)



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Step Up and Down

Stand tall behind a step.

Place your whole foot on the step and step up. Continue forward by stepping down with the same leg you started the exercise with.

Note: While stepping up and down keep hip, knee and toes aligned.

Repeat up to 10 times, Daily 3 times.

Essential stretches to compliment rehabilitation programme

[Video](#)



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Hamstring Stretch

Stand tall.

Take the leg you want to stretch in front of you, heel on the floor. Move your pelvis backwards, bend the supporting leg and bend your trunk forward (from the hips) until you can feel a stretch in the back of your thigh.

Repeat 10 times.

[Video](#)



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Stand in a walking position with the leg to be stretched straight behind you and the other leg bent in front of you. Take support from a wall or chair.

Lean your body forwards and down until you feel the stretching in the calf of the straight leg. Hold approx. 30 secs. - relax. Stretch the other leg.

Repeat 10 times.

[Video](#)



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Stand with the leg to be stretched behind the other leg.

Push your heel down while bending the knee to stretch the achilles tendon.

Repeat 10 times.

[Video](#)



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Stand holding on to a support with one hand and to the ankle with the other hand.

Pull the ankle towards your bottom, then try to straighten the knee approx. 10 secs. while resisting with your hand.

Relax your leg and repeat the exercise pulling the ankle up a bit further. Return to starting position.

Repeat 10 times.

If this regime is too much do the exercises at least once as a minimum.

You may feel some mild discomfort during these exercises but if you feel an increase in pain then seek advice from the physiotherapist before continuing.

For further information

Please email ghnt.newcastlegatesheadtims@nhs.net, ring our Booking Office on **0191 4452643** or visit our website at: www.tims.nhs.uk which provides online guidance and support on managing your musculoskeletal (MSK) condition effectively.

The NHS website also provides trusted online information and guidance on all aspects of health and healthcare to help you manage your condition and/or inform your choices about your health: www.nhs.uk.

Useful links

The Patient Advice and Liaison Service (PALS) can offer on-the-spot advice and information about the NHS. You can contact them on freephone **0800 032 02 02** or e-mail northoftynepals@nhct.nhs.uk.



Tyneside Integrated Musculoskeletal Service

TIMS is a partnership between Newcastle upon Tyne Hospitals NHS Foundation Trust and Gateshead Health NHS Foundation Trust

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